STUDYING OZONOLYSIS REACTIONS OF 2-BUTENES USING CAVITY RING-DOWN SPECTROSCOPY

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Ozonolysis reactions of alkenes are important oxidation pathways of alkenes in the atmosphere, and they are also significant sources of tropospheric hydroxyl radicals. In this work, ozone reactions with *trans*- and *cis*-2-butene are studied using cavity ring-down spectroscopy (CRDS). Vinoxy (CH_2CHO) radical, a proposed co-product of OH from dissociation of Criegee intermediates following the primary ozonolysis of 2-butenes, is directly observed. The vinoxy formation is found to decrease with increasing pressure. Formaldehyde (HCHO), a side-product in the ozonolysis reactions, is also monitored. Chemical kinetic modeling has been performed to illustrate the reaction mechanisms and to quantify the reactive intermediate and product yields.